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ABSTRACT

Two groups of grade 12 French immersion students in Ottawa and Carleton, Ontario, one having been in immersion French since at least grade 4 and one having started in grade 6 or 7, were administered three tests of French proficiency in a study of the groups' comparative language achievement. Scores sufficiently high to excuse the students from the required university French course were obtained by 93 percent of the early-entry group and by 90 percent of the late- entry group on one test; no significant differences between the groups were found on the other two tests. Mean scores for both groups were significantly higher than those for anglophone university students who had just completed an experimental psychology course in French. Scores on individual oral fluency and communicative competence tests were significantly higher for early-entry than for late-entry students. Both groups achieved relatively high overall proficiency. Comparison with earlier years' findings for the same cohort suggest that differences between early- and late-entry students' proficiency may decrease as they progress through high school and that proficiency scores from grade 8 may be effective predictors of grade 12 results. (MSE)

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EVALUATION OF THE SECOND LANGUAGE LEARNING (FRENCH) PROGRAMS IN THE SCHOOLS OF THE OTTAWA AND CARLETON BOARDS OF EDUCATION, VOLUME I

French Proficiency of Immersion Students at the Grade 12 Level

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ABSTRACT

The French proficiency of Grade 12 students was one of three topics investigated in 1984 as part of the on-going research on second language learning in the Ottawa Board of Education supported by contracts with the Ministry of Education since 1973. These students, who entered Kindergarten in 1971, had been in early- or late-entry immersion programs at the elementary level, typically followed by 10 to 12 courses in French during high school. The cumulative amount of time in French averaged from 6500 to 7000 hours for early-entry students and from 3000 to 4000 for late-entry. The analysis groups included students who had been in the early-entry program at least since Grade 4 and those who had had the full late-entry program, starting in Grade 6 in Ottawa and in Grade 7 in Carleton; each group consisted of about 70 students.

Three tests of French proficiency were given to these Grade 12 students, two developed by staff at the University of Ottawa and the third by the research team. Scores on the Test of French Proficiency which would be sufficiently high to excuse them from the required French Language course at the university were obtained by 93 per cent of the early-entry students and 90 per cent of the late-entry group. Moreover, the Grade 12 mean scores were considerably higher than the post-test means of a group of anglophone students at the university who had just completed an experimental program in which first year psychology had been taught in French. However, no significant differences were found between the early- and late-entry groups on the two tests taken at the University of Ottawa.

On an individual speaking test designed to examine the fluency and communicative competence of the Grade 12 students, the mean scores of the early-entry group were found to be significantly higher than those of the late-entry students, both on the test as a whole and on the three subtests.

Although the instruments used in 1984 at the Grade 12 level had not been given previously to any Ottawa or Carleton groups, it was possible to compare the general results with those of previous years. In 1981, significant differences had been found between the early- and late-entry Grade 10 groups on all five of the measures used. When a different set of tests was used with the K-71 cohort at the Grade 10 level in the following year, fewer differences were found, possibly because some of the tests were less sensitive.

A regression analysis indicated that a combination of several French proficiency test scores from Grades 8 and 10 could lead to a multiple correlation of 0.70 with the Test of French Proficiency and with a dictation test taken at the University of Ottawa. Simple correlations of these criterion measures with the earlier tests tended to be between 0.50 and 0.60.

Data collected so far suggest that differences between the early- and late-entry immersion students may decrease as they progress through high school. Moreover, there is a considerable overlap in the score distributions of the two groups and both achieve a commendable standard of proficiency when compared with other groups. The results of this study also show that French proficiency tests taken at the Grade 8 level can be effective predictors of results obtained in Grade 12.

ELEVENTH ANNUAL REPORT: PART I

FRENCH PROFICIENCY OF IMMERSION STUDENTS AT THE GRADE 12 LEVEL

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INTRODUCTION

In the fall of 1971 a group of nearly 450 children entered French immersion programs at the Kindergarten level in the schools of the two public boards in the Ottawa-Carleton area. By Grade 8, of the 288 students who had not moved away from the area, two-thirds were still in French immersion in an elementary school or in a bilingual or extended French program in high school or elsewhere. At the Grade 9 level, the proportion in such a program had dropped slightly, to 61 per cent. By the fall of 1983, 260 of these students were still present in an Ottawa or Carleton Board school, most of them in Grade 12, and 40 per cent of them had continued in a program emphasizing French instruction to the end of Grade 12.

Also in Grade 12 during the 1983-84 school year was another group of students who had entered a late-entry immersion program at the Grade 6 level in the schools of the Ottawa Board of Education or at the Grade 7 level in Carleton Board schools and who had continued in the bilingual program at the high school level.

Those students who entered Kindergarten in the fall of 1971 are usually referred to as the K-71 cohort, and include the first large group of early immersion students to reach Grade 12. A large amount of data related to French proficiency has been collected over their entire school career, and it was very desirable to obtain information about the French proficiency of this well-studied group at the end of Grade 12 and to make preparations for following the progress of these students after they leave secondary school.

There were also numerous other students present in bilingual high school programs at the Grade 12 level. These students had entered the program at some other time than the two specific entry points mentioned above. Their backgrounds are diverse and often not much is known about the program followed prior to entering one of the Ottawa or Carleton Board schools, although many of them had attended a separate school in the area.

The 1984 contract with the Ministry of Education included as one of the major topics of investigation an examination of the French proficiency of immersion students in the K-71 cohort, including a comparison of the results obtained for the early- and late-entry groups.

PROCEDURES

Groups Tested

In Ottawa graduates from both the early- and the late-entry programs, along with some students having a variety of other backgrounds, attend three secondary schools which offer bilingual programs. The situation has been different for some of the Carleton groups in the present study, with the early-entry students being largely grouped at two schools and the late-entry ones at three others. The typical student in these programs took 10 to 12 credits in French.

The cumulative amount of time in French for early-entry students in Ottawa and Carleton schools was similar and averaged from 6500 to 7000 hours. For the late-entry students who had reached the Grade 12 level the cumulative time averaged about 3000 hours in the Carleton schools and almost 4000 hours in Ottawa schools. This was the first year that Grade 12 students in the Ottawa late-entry immersion program had received 40 minutes a day prior to entering immersion in Grade 6. The Carleton students in the K-71 cohort had received 20 minutes of French daily before entering immersion, as had been the case in Ottawa for the late-immersion students tested at the Grade 12 level in earlier years. The appendix contains a table showing the amount of time spent in French at each grade level and the average cumulative time for each type of immersion group reaching Grade 12 in the two boards in the 1983-84 school year.

All bilingual program classes in Grade 12 were tested. Table 1 indicates the number of students in each program, as well as the number of schools represented. It can be observed that in each case the total number of students in a group is considerably greater than the number whose scores were included in the analyses. Students were usually included in the early-entry analysis group if they had been in the program since Grade 4 or earlier, while those in the late analysis groups had all experienced the full program in Ottawa or Carleton. Since the numbers of students in the various groups in each board was small, the results of students in the two boards were combined and two analysis groups consisted of those who had an early-entry and those who had a late-entry immersion background.

TABLE 1

GRADE 12 EARLY- AND LATE-ENTRY GROUPS TESTED,
OTTAWA AND CARLETON, SPRING 1984

Group	No. of students in program	No. in analysis group	No. of schools
OBE early-entry	68*	56	3
OBE late-entry	40*	30	3
CBE early-entry	19	15	2
CBE late-entry	54	39	3

*Students from early- and late-entry immersion were mixed in most of these classes, along with students from various other backgrounds.

Instruments

Three tests were administered to the Grade 12 student groups described in the previous section. Two of these had been developed for use at the University of Ottawa and the third test was constructed by the research team. The assistance of the staff of the University of Ottawa Centre for Second Language Learning in making their tests available and in providing experienced testers is much appreciated. Additional details concerning each of the tests is given below.

Test of French Proficiency (University of Ottawa). Equivalent forms of this test are used to determine whether students entering the University of Ottawa fulfil the requirements of the university without further French language courses. Version 83B (September 1983) was the form used in this study. The test consists of a series of multiple-choice subtests intended to evaluate listening and reading comprehension. The passing mark is 70 per cent and students who have reached this level have fulfilled the language requirements of the university without taking further French language courses. The pass mark is interpreted as indicating that examinees have a minimal ability to understand the content of material which might be used in introductory courses given in French; however, it is felt that without further French language training students at this level do not have adequate proficiency to follow courses intended for francophones.

The first part of the University of Ottawa Test of French Proficiency is a test of listening comprehension consisting of 30 items based on excerpts of dialogue and lecture-type material. The 30 items in Part II (Reading) relate to three types of written material: a letter, an article, and a passage from a text. Part III is a 30-item cloze-type test, in which the reader is to select from given choices the appropriate words or phrases to fill blanks left in a continuous text. The test requires 75 minutes for completion.

Language Pre-test (Psychology). This test was developed to measure the improvement in French language performance of a group of English-speaking first year university students participating in an "immersion" experiment conducted by the School of Psychology and the Centre for Second Language Learning at the University of Ottawa. In this program the lectures and textbook for the course in introductory psychology were in French. Additional assistance in understanding the course material was provided by a professor who specializes in teaching French as a second language to English-speaking students. Thirty-two students with initial scores of 50 to 80 per cent on the university's French Proficiency test had successfully completed this course. At the end of a two-semester course the students in this experimental program obtained significantly higher scores on the post-test than they had received on the pre-test.

The test was in two parts, one consisting of five open-ended questions on a text on dwindling natural resources which was heard from a tape and the other a dictation consisting of material on the origins of genius. Each subtest required 15 minutes and the maximum possible scores were 12 for Subtest 1 and 113 for Subtest 2. The scoring procedures are described later, in the section dealing with test results.

French Speaking Test. This test was based on procedures used elsewhere in testing speaking proficiency in second languages, including English and French, but it was developed and administered by staff of the Research Centre of the Ottawa Board of Education. The test consisted of three sections intended to test the fluency and communicative competence of the student. The total time required was 15 to 20 minutes.

In the first part of the test the student was provided with a schedule of events which were to take place during several days of an anniversary celebration at a senior citizens' centre. The student was then asked to make an announcement to an imaginary group of senior citizens about these events; following this announcement the student was asked specific questions to determine whether he or she had understood some of the more difficult vocabulary in the schedule.

The second section required the student to tell what was happening in each of a series of related pictures. The examiner asked questions to obtain a fuller explanation if this appeared to be necessary. Again, the questions attempted to elicit specific vocabulary (l'hôtesse, ceinture de sécurité, etc.) if it had not already been produced spontaneously.

For the third part of this test the student was given two summer job advertisements, along with a brochure about the locale or business involved. The two possibilities were very different, since one involved working and living in a summer resort hotel, while the other was a city tour guide position and the student would be able to live at home. After allowing a short time for reading the material, the tester asked the student to make a choice between the two imaginary positions and to justify this choice. Again other questions were asked to elicit additional information in order to make it possible for the tester to establish a rating of the speaking proficiency of the student.

Aptitude. In previous studies at the elementary level in the Ottawa and Carleton Boards (Pawley, 1980) it had been found that mean scores on scholastic aptitude tests for the students in French immersion classes tended to be higher than those of students in the regular English stream. Scores were available for three subtests of the Differential Aptitude Test (Psychological Corporation, 1966), Verbal Reasoning (VR), Numerical Ability (NA), and Abstract Reasoning (AR). These tests had been given at the Grade 9 level in Ottawa and in some Carleton schools and it was therefore possible to compare the results for students in the early-entry and the late-entry immersion groups.

Analyses

Scholastic ability. For each of the aptitude tests, the mean and standard deviation of the scores were obtained for the students in the early- and late-entry groups in Ottawa, as well as for other students enrolled in the French language classes tested at the Grade 12 level. Table 2 shows the results of these tests for the three subgroups. There were no significant differences among the mean scores on any of the measures.

TABLE 2

MEAN APTITUDE TEST SCORES FOR GRADE 12 BILINGUAL PROGRAM STUDENTS, OTTAWA AND CARLETON, 1984

Group	Verbal Reas.			Numerical Abil.			Abstract Reas.		
	Mean	SD	N	Mean	SD	N	Mean	SD	N
Primary-entry	27.4	9.1	67	24.3	7.0	67	38.0	5.8	68
Late-entry	28.0	8.5	68	27.4	6.9	52	38.3	4.9	41
Others	27.4	8.3	45	26.5	11.0	37	40.6	11.1	30

Analysis of variance. For each measure used, the mean and standard deviation were calculated for the students in the various analysis groups who were present to take the test. Analyses of variance, followed by Scheffé post hoc procedures as necessary, were carried out to determine whether differences between the groups were statistically significant. Since the mean scores on the aptitude measures had shown no significant differences between groups, an analysis of covariance was not carried out.

Test of French Proficiency (University of Ottawa)

As noted earlier, this is a test used to determine whether students entering the university can fulfil the requirements of the university regarding knowledge of French without further courses in the langauage. The test consists of three subtests, each with 30 objective items; however, the total score is expressed as a percentage of the possible score of 90, and a mark of 70 per cent or more is required for the student to be excused from French language courses.

The results on each of the subtests for the students in the analysis groups who were present to take this test are shown in Table 3. Each of the subtests had a possible maximum score of 30 and it will be observed that the mean score for the students in each of the subtests was over 80 per cent of the possible score.

TABLE 3

TEST OF FRENCH PROFICIENCY (UNIVERSITY OF OTTAWA): SUBTEST SCORES, GRADE 12 BILINGUAL PROGRAM, OTTAWA AND CARLETON, SPRING 1984

Group	No. of cases	Listening		Reading		Cloze	
		Mean	SD	Mean	SD	Mean	SD
Early-entry	72	25.8	3.7	24.9	4.3	24.4	2.5
Late-entry	68	25.1	3.7	25.1	4.3	24.3	2.4
Others	97	26.0	3.9	25.5	4.5	24.7	2.7

There were no significant differences among any of the three subgroups on the Listening, Reading, or Cloze subtests of the University of Ottawa Test of French Proficiency. The intercorrelations between the listening test and the other two were 0.38 and 0.36 respectively for the total group of 237 students tested, while the correlation between the reading and the cloze test was 0.28. Although these values are significant at the 0.001 level, they are relatively low, probably because of the restricted range of scores within the group. For the total group of 2633 students tested at the University of Ottawa in September 1983 the intercorrelations between pairs of these three tests ranged from 0.69 to 0.75.

The frequency distributions of the total percentage scores for the various groups are shown in Table 4. It may be seen that a high proportion of each group scored at the upper levels of this test. From 70 to 75 per cent obtained 80 per cent or higher, and 10 per cent or less of each of the three groups obtained scores below the 70 per cent pass mark. The total score when converted to a per cent gave means ranging from 82.8 to 84.6 per cent for the three groups, as shown in Table 4. Again there was no statistically significant difference between the groups. The mean score for 2633 students taking the same form of the test at the University of Ottawa in 1983 was 51.8, with a standard deviation of 21.5.

TABLE 4

FRENCH PROFICIENCY TEST: DISTRIBUTION OF TOTAL SCORES,
GRADE 12 BILINGUAL PROGRAM, OTTAWA AND CARLETON, SPRING 1984

Score in per cent	Early-entry		Late-entry		Others	
	N	%	N	%	N	%
95-99	5	7	3	4	9	9
90-94	15	21	20	30	28	29
85-89	15	21	9	13	17	18
80-84	18	25	15	22	18	19
75-79	9	12	6	9	11	11
70-74	5	7	8	12	5	5
65-69	2	3	5	7	5	5
60-64	2	3	2	3	3	3
55-59	0	0	0	0	1	1
50-54	1	1	0	0	0	0
Mean	83.5		82.8		84.6	
SD	9.0		8.9		9.1	
N	72		68		97	

Language Pre-test (Psychology)

Through the co-operation of the Centre for Second Language Learning at the University of Ottawa the Grade 12 students tested in the spring of 1984 took a test developed to measure the improvement in French language performance of an experimental group of students for whom French was a second language and who took the first-year psychology course in French. One part of this test evaluated listening comprehension and consisted of five open-ended questions with a maximum possible score of 12. The second subtest was a dictation test, with a maximum possible score of 113.

Listening comprehension. The results for the various groups of Grade 12 students who took this first subtest are shown in Table 5. There were no significant differences among any of the groups.

TABLE 5

LANGUAGE PRE-TEST (PSYCHOLOGY): LISTENING COMPREHENSION,
GRADE 12 BILINGUAL PROGRAM, OTTAWA AND CARLETON, SPRING 1984

Group	Mean	SD	N
Early-entry	5.2	1.6	72
Late-entry	5.3	2.4	65
Other	5.3	2.2	96

The results achieved by the psychology immersion group can be used for comparison, although it should be remembered that most of these students did not have immersion experience in elementary or secondary school. At the beginning of the course this psychology group had an average score of 3.1 and at the end of the two-semester course the average was 4.0. The mean scores of the three bilingual program groups were all considerably higher than either the pre- or the post-test score of the psychology students.

Dictation. The second part of the test consisted of a dictation which took about 15 minutes. Two scoring methods were used; one required the exact reproduction of each word including spelling, while the second method required only that the student showed understanding of each word in context; incorrect spelling and even substitutions were considered acceptable if the sentence reflected the same meaning as the dictated text. For either method, the maximum possible score was 113. The correlation between the results obtained from the two scoring methods was 0.88, indicating that they gave very similar rankings of the students, although there were, of course, differences in the mean scores.

The mean scores for the dictation test, as obtained by the two scoring methods for the three subgroups identified, are shown in Table 6. Again there were no significant differences among the groups. The correlation between scores on the dictation and the listening comprehension subtests was 0.27, indicating that the two parts of the pre-test were relatively independent.

When the dictation test results were compared with those of the psychology group, it was also found that the scores of the bilingual program groups were substantially higher. Using scoring method 1 the pre- and post-test scores of the psychology group were 32.3 and 43.5 respectively. With the second scoring method, the mean pre-test score of the Grade 12 group was 55.6 and the post-test mean was 71.8.

TABLE 6

LANGUAGE PRE-TEST (PSYCHOLOGY): DICTATION,
GRADE 12 BILINGUAL PROGRAM, OTTAWA AND CARLETON, SPRING 1984

Group	Scoring method 1		Scoring method 2		N
	Mean	SD	Mean	SD	
Early-entry	69.0	15.7	87.8	12.8	72
Late-entry	65.1	14.7	84.7	12.4	65
Other	69.5	17.2	87.7	13.2	96

Correlations between the scores on each part of the psychology pre-test and on the other tests used with former immersion students in the spring of 1984 are shown in Table 7. The highest correlation was between the total scores on the French Proficiency Test and the Dictation I score, where the value of 0.49 indicates that the two measures had 24 per cent of their variance in common. The corresponding correlation coefficient for a group of 77 psychology students at the University of Ottawa was 0.43.

TABLE 7

CORRELATIONS WITH LANGUAGE PRE-TEST (PSYCHOLOGY) SCORES,
GRADE 12 BILINGUAL PROGRAM, OTTAWA AND CARLETON, SPRING 1984

Test	Correlation with Psychology pre-test		N
	Listening	Dictation I	
French Proficiency (U. of O.)			
Listening	0.28	0.36	223
Reading	0.27	0.35	223
Cloze	0.19	0.43	223
TOTAL	0.34	0.49	223
Speaking (OBE)			
TOTAL	0.21	0.52	87

French Speaking

A sample of 48 early-entry and 57 late-entry students who had taken at least one of the two tests at the University of Ottawa also were given an individual French speaking test. The three parts of this test, which were described earlier, were designed to examine the fluency and communicative competence of the student.

Each subtest was scored by the same trained francophone tester, using a five-point rating scale. Each point on the scale was accompanied by a description of the typical performance at that level. It was also possible to indicate through the use of half-scores a proficiency which seemed to exceed that described at one level but not equal to that of the next level. Table 8 gives the description associated with each rating used with these students. The correlations among the subtests ranged from 0.86 to 0.92, suggesting the use of the total score alone as a global measure of speaking ability.

TABLE 8

DESCRIPTIONS USED FOR SCORING OF 1984 GRADE 12 FRENCH SPEAKING TEST

Rating 2: Speech is frequently hesitant and jerky, but the student manages to rephrase and continue, sometimes with inconsistent or incomplete passages. Although there is general accuracy in basic grammatical construction, errors exist. Vocabulary is adequate for basic conversations, although the limitations of vocabulary prevent precision and more detailed conversation. Pronunciation and accent, though sometimes faulty, almost never impede meaning.

Rating 3: Speech may still be somewhat uneven, with bursts of fluency ending with a groping for words or construction. Cannot sustain coherent structures in longer more complex utterances or unfamiliar situations and the ability to give precise information is limited. Some hesitation and circumlocution or rephrasing is necessary due to the limitations of vocabulary. Has control of elementary constructions quite accurately, but errors occur in the more complex ones. Pronunciation, though not perfect, is intelligible. A fair amount of relevant information is conveyed, although not always in a manner appropriate to audience and situation.

Rating 4: Speech is generally continuous, but may include some slight hesitation or stumbling. There are only a few errors of grammar and the vocabulary is generally appropriate with a fairly good range of more precise words. There are few errors or hesitations of accent and pronunciation. Most of the relevant information is conveyed, usually in an appropriate manner.

Rating 5: Speech is natural and continuous with no grammatical errors. Any pauses correspond to those that might be made by a native speaker. Vocabulary is appropriate, extended and varied. Pronunciation is excellent. All relevant information is conveyed in a manner appropriate to the situation.

Table 9 shows the means and standard deviations of scores obtained on the three subtests and on the entire test by the sample groups of early- and late-entry students. On each of the subtests the mean rating for each group fell between three and four; Table 8 can be used to obtain an indication of the speaking proficiency of these students. Although there is a relatively small difference in the mean ratings obtained by the two groups, the difference for each subtest and for the total test is significant.

TABLE 9

FRENCH SPEAKING TEST: SUBJECT SCORES,
GRADE 12 EARLY- AND LATE-ENTRY GROUPS, OTTAWA AND CARLETON,
SPRING 1984

Test	Early-entry			Late-entry		
	Mean	SD	N	Mean	SD	N
Subtest 1	3.5**	0.6	48	3.2	0.6	57
Subtest 2	3.6*	0.6	48	3.3	0.6	57
Subtest 3	3.8**	0.6	48	3.4	0.7	57

* Mean of the early-entry group significantly greater than that of the late-entry group ($p < 0.05$)

** Mean of the early-entry group significantly greater than that of the late-entry group ($p < 0.01$)

Figure 1 shows more clearly that although the range of scores is similar, a higher proportion of the early-entry students scored at the higher levels, while a greater proportion of the late-entry students had scores at the lower levels. Additional details as to the distribution of the total scores will be found in Table 10.

FREQUENCY DISTRIBUTIONS OF FRENCH SPEAKING TEST: TOTAL SCORE,

GRADE 12 EARLY- AND LATE-ENTRY GROUPS,

OTTAWA AND CARLETON, SPRING 1984

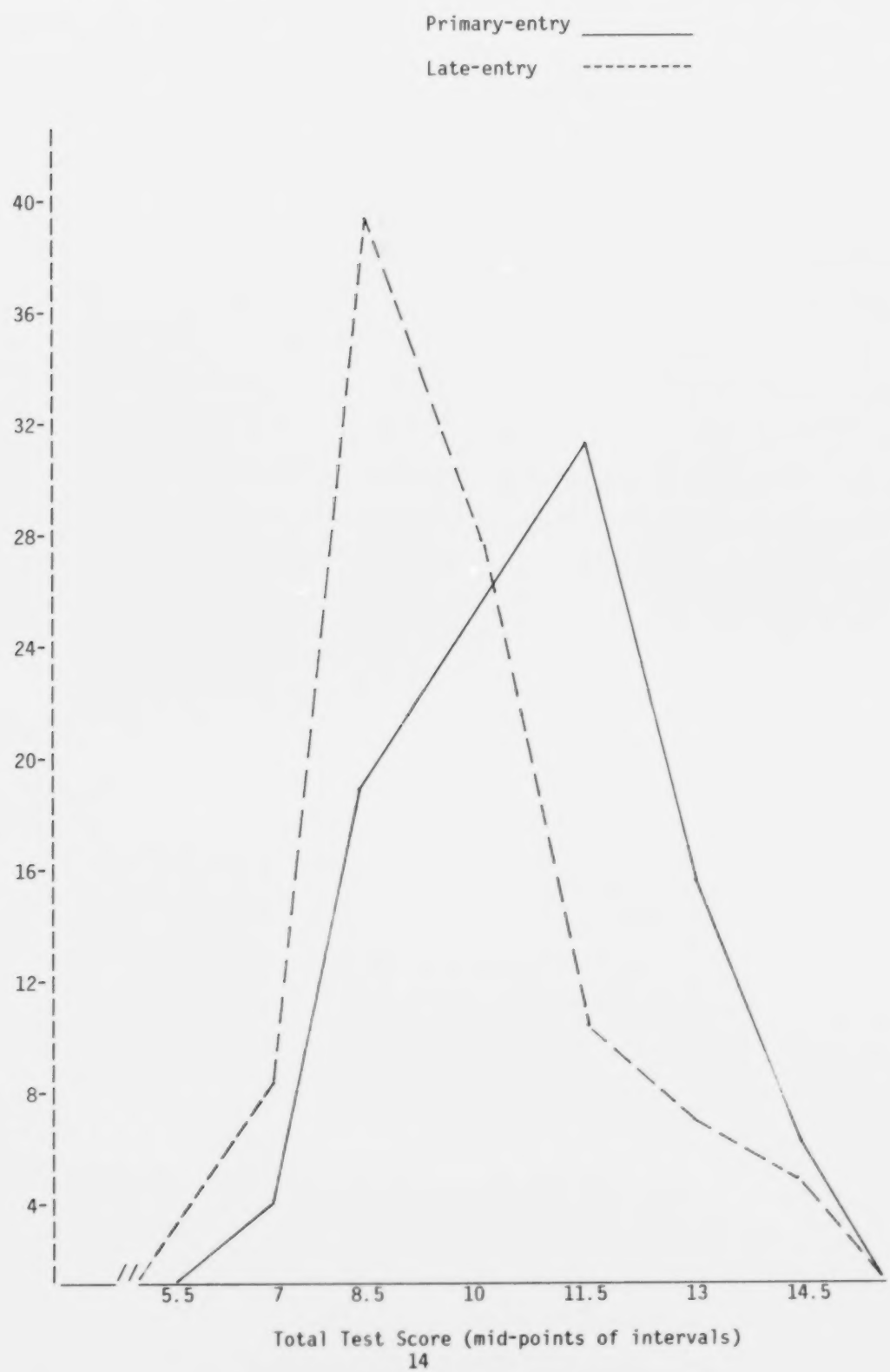

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TABLE 10

FRENCH SPEAKING TEST: DISTRIBUTION OF TOTAL SCORES, GRADE 12 EARLY- AND LATE-ENTRY GROUPS, OTTAWA AND CARLETON, SPRING 1984

Total score	Early-entry N	Early-entry %	Late-entry N	Late-entry %
15+	1		0	
14.5	1		3	
14	1	8	0	7
13.5	1		1	
13	3		3	
12.5	3		0	
12	4	27	3	14
11.5	3		2	
11	8		1	
10.5	8		2	
10	0	42	6	30
9.5	4		8	
9	7		15	
8.5	2		3	
8	0	23	4	46
7.5	2		4	
7	0		1	
6.5	0		0	
6	0	0	1	3
Mean	10.9**		9.8	
SD	1.7		1.9	
N	48		57	

** Mean of the early-entry group significantly greater than that of the late-entry group ($p < 0.01$)

The taped tests of 29 students were re-scored by the same tester after an interval of one month. For all of the subtests there was a tendency for the tester to give a higher score the second time. The difference was not significant when the distribution of total scores was examined, and the correlation between the two sets of total test scores was 0.81.

Correlations between the speaking test total score and the other tests administered to Grade 12 students in the spring of 1984 are shown in Table 11. The highest correlations with the total score on the speaking test involved the cloze subtest of the University of Ottawa French Proficiency test (0.44) and the Dictation I score of the psychology pre-test.

TABLE 11

CORRELATIONS WITH SPEAKING TEST: TOTAL SCORE,
GRADE 12 BILINGUAL PROGRAM, OTTAWA AND CARLETON, SPRING 1984

Test	r	N
Placement		
Listening	0.33	92
Reading	0.28	92
Cloze	0.44	92
TOTAL	0.44	92
Language pre-test		
Listening	0.22	87
Dictation I	0.52	87

The fact that the task of the listening test section of the language pre-test was not only to comprehend and retain what had been heard, but also to jot down a response in a very limited time probably contributed to the low correlations of this test with others. On the other hand, the dictation test may have required some of the same skills and a level of internalization of the language that would be required by the communicative-type speaking test.

COMPARISONS WITH PREVIOUS YEARS

The instruments used with Grade 12 in 1984 had not been used previously with any groups within the Ottawa and Carleton Boards, but it is possible to compare the general results with those of previous years. The main emphasis of the 1982 contract was the examination at the Grade 10 level of the French proficiency of graduates of early- and late-entry immersion who continued in high school bilingual programs. A test of reading and language usage designed for francophone students was given to students in Grades 8 through 12 of bilingual high school programs in order to allow a cross-sectional comparison to be made. In addition, a sample of writing in French was obtained from the Grade 10 students, some of whom also took the Public Service Commission tests and a locally constructed speaking test.

It was also possible to compare the Grade 10 scores obtained in 1982 with those of the groups at the same grade level in the previous year and with groups who had been in Grade 8 in 1979 and 1980. These tests included several IEA tests, a cloze test, and others developed at the Ontario Institute for Studies in Education (OISE), as well as a test of written composition and an interview. A brief summary of these studies is given below; additional details will be found in the Seventh and Ninth Annual Reports to the Ministry (Morrison et al., 1980, 1982).

Grade 8 and Grade 10 Results, 1979 - 1982

Test de français. The form of this test which was used with Grades 10 to 12 in 1981 and 1982 was originally intended for Grade 10 (Secondaire IV) francophone students in Quebec. The last 60 items, which involve vocabulary, paragraph completion, and identification of grammatical errors, were administered in 1982 to students in Grades 10 to 12. There were no significant differences in the mean scores on this test between the early- and late-entry groups at the Grade 10 level in 1982 in either of the boards or between the corresponding program groups in the two boards. In the previous year, however, Grade 10 early-entry groups in both boards had significantly higher mean scores than the late-entry group in the same board on the total as well as on several part scores.

In 1980 and 1982 another level of the Test de français was administered to students in Grade 8 classes of both early and late immersion in Ottawa and Carleton. This test was intended for francophone students in Quebec at the Secondaire I level, and in all cases in both boards the early immersion students had significantly higher mean scores than the late-entry group.

French writing. The stimulus used to elicit a sample of French written expression from the groups of Grade 10 students tested took the form of a statement of personal opinion on a subject thought likely to evoke strong opinions in all students. The persuasive letter written by the student was scored holistically and on five "analytic" scales, in each case using a five-point rating scale. No significant differences were detected between early- and late-entry students in Ottawa or in Carleton on any of the six ratings. However, when the groups from Ottawa and Carleton were combined, on the Word Choice scale the early-entry group had significantly more ratings in the higher range than the late-entry group.

At the Grade 8 level the student was given 20 minutes to write a short composition in French on an assigned topic. For each composition a count was made of the number of words written and of the number of errors, and the average sentence length and the number of errors per hundred words were determined. In 1979 and 1980 the early-entry group had significantly fewer errors than the late-entry group in three of the four comparisons made. The groups also differed with respect to total length of composition in 1980 and average sentence length in 1979.

Test de mots à trouver. This cloze-type test was developed by OISE for use with immersion classes. The student is presented with a text of about 300 words in which every seventh word is missing and is asked to supply the missing words. One form of this test was used at the Grade 8 level in both 1979 and 1980 and a different form was given in Grade 10 in 1981. On all of these occasions the early-entry group had significantly higher mean scores than the late-entry group.

IEA tests. Several tests developed for use in international studies of second language were used in Grade 10 in 1981 and one of these was given to Grade 8 students in 1980. On all but one of the eight comparisons between early- and late-entry groups in the Ottawa Board or in the Carleton Board, the early-entry group had significantly higher mean scores.

Speaking test (structures). This test was designed to investigate the extent to which the students could produce certain grammatical structures correctly in French, and was administered to samples of students in Grade 8 and Grade 10 in the Ottawa and Carleton Boards in 1982. The early-entry students at both Grade levels who were tested in 1982 did significantly better than those who had been in late-entry programs in these two boards. The Grade 10 groups also had significantly higher mean scores than the Grade 8 groups in the same program.

Comparisons with 1984 Results

Table 12 summarizes the comparisons between late-entry and early-entry immersion students who were in the K-71 cohort at the Grade 8 and 10 level which were discussed in the preceding sections. This table includes the 1984 comparisons at the Grade 12 level and also comparisons involving other Grade 8 and Grade 10 groups. It will be noted that the early-entry students usually obtained higher mean scores than the late-entry students but in 1984 there were relatively few instances in which the differences were significant. At earlier grade levels, significant differences between these groups were more common, particularly in Grade 8.

The scores on the French speaking test given in 1984 to a sample of Grade 12 students from both programs showed significant differences between the early- and late-entry groups, both on the ratings given on the each of the subtests and on the total score. However, there were no significant differences between these groups on any of the other tests used in 1984. It is possible that some of the latter tests were not sensitive enough to detect differences between the two immersion groups.

For the tests taken at the University of Ottawa both groups obtained mean scores which were considerably higher than those of the groups for which the tests were intended. On the screening test, the passing mark was 70 per cent and this was obtained by 30 per cent of the university entrants who took the test in 1983, while 90 to 93 per cent of the immersion students reached this level. On the test used as a pre-test and a post-test for students in the experimental psychology course, the final rating on the listening test and the final score on the dictation test were both much higher for each of the immersion groups than the post-test scores for the university students.

For the Grade 10 groups tested in 1981 there were significant differences between the early- and late-entry groups on all five of the measures used, while the 1982 group at the same grade level did not show as many such differences when a different and possibly less sensitive set of tests was used. It is also possible that the two groups of Grade 10 students differed from each other in aptitude or motivation as well as in French proficiency, but the available data do not provide any information on this question.

The data collected so far suggest that differences in French proficiency between the early- and late-entry immersion students decrease as they progress through high school. Even in the early high school grades, when the mean scores tend to differ on most of the measures used, there is considerable overlap in the score distributions of the two groups. Although there may still be detectable differences between groups if the appropriate instrument is used, it is perhaps more important to emphasize the fact that students from both groups achieve a commendable standard of proficiency when compared with francophones, with anglophone students entering a bilingual university, and even with public servants taking the PSC examinations.

TABLE 12

COMPARISON OF FRENCH PROFICIENCY OF EARLY- AND LATE-ENTRY IMMERSION STUDENTS AT GRADES 8, 10, and 12 IN OTTAWA AND CARLETON, 1979 - 1982

Grade	Year	Measure	EFI < LFI ($p < 0.05$) Ottawa	Carleton	Combined
8	1979	Compréhension auditive	yes	yes	---
		Compréhension de l'écrit	yes	yes	---
		Mots à trouver D	yes	yes	---
		Français I	yes	yes	---
		Composition: total length	no	no	---
		average sent. length	yes	yes	---
		error rate	yes	yes	---
8	1980	IEA IV Reading	yes	yes	---
		Mots à trouver D	yes	yes	---
		Français I	yes	yes	---
		Composition: total length	yes	yes	---
		average sent. length	no	no	---
		error rate	yes	no	---
		Interview Test	yes	yes	---
8	1982	Français I	yes	yes	---
		Speaking Test (Structures)	no	no	yes
10	1981	IEA IVS Listening	no	yes	---
		IEA IVS Reading	yes	yes	---
		IEA IV Writing	yes	yes	---
		Mots à trouver C	yes	yes	---
		Français IV	yes	yes	---
10	1982	Français IV	no	no	---
		French Writing: Holistic	no	no	no
		French Writing: Analytic -			
		Word Choice	no	no	yes
		Technical Skills	no	no	no
		Grammatical Skills	no	no	no
		Content & Ideas	no	no	no
		Organization	no	no	no
		Speaking Test (Structures)	no	no	yes
12	1984	U of O Fr. Prof: Listening	---	---	no
		Reading	---	---	no
		Cloze	---	---	no
		Total	---	---	no
		Psych. Pre-Test: Listening	---	---	no
		Dictation 1	---	---	no
		Dictation 2	---	---	no
		Speaking Test: Part 1	---	---	yes
		Part 2	---	---	yes
		Part 3	---	---	yes

Note: In 1984 no comparisons were made within the individual boards, while in earlier years results were not usually combined for early or late immersion students across boards.

Multiple Regression Analysis

Correlations. The relationships among the subtests of each of the three measures used in 1984 and also among the total test scores have already been presented as part of the discussion of the results of these tests. The differences between the scores of early- and late-entry students in the K-71 cohort at the Grade 8 and the Grade 10 level and for another group tested in 1981 have also been reported and compared with the 1984 results for the Grade 12 groups. This section of the report will examine the relationships between the earlier test scores of the K-71 cohort and those obtained when they were in Grade 12. Since scores on a verbal aptitude test was also available for many of the students at the Grade 9 level, this was included in the analysis as well. The scores available for this analysis were obtained from these three groups of tests:

Grade 8 group test scores

Test de français, Secondaire I (FR I)
IEA IV French Reading Test (IEA IV)
Test de mots à trouver, Niveau D (CLOZE)
French composition, errors per 100 words (ERROR)

Grade 10 group test scores

Test de français, Secondaire IV (FR IV)
Writing test, sum of 5 analytic ratings (WRIT)

Other test scores

Grade 9 DAT Verbal Reasoning (VR)
Grade 10 Speaking Test, Structures (SPEAK)

The simple correlations between the variables listed above and the total score on the French proficiency test used at the University of Ottawa (FP-TOTAL) are shown in Table 13 for both the early- and the late-entry groups and for the total group involved in the 1984 study. It will be observed that for the early-entry group the correlations between several of the predictors and this criterion were about 0.60, while the relationship tended to be less strong for the late-entry group. Since a high ERROR score on the Grade 8 writing test represented low proficiency, it will be noted that the correlation in this case is a negative one.

TABLE 13

CORRELATIONS BETWEEN PREDICTOR VARIABLES AND FRENCH PROFICIENCY: TOTAL SCORE, GRADE 12 EARLY- AND LATE-ENTRY GROUPS, OTTAWA, 1984

Group of tests	Predictor variable	Correlation with French Proficiency: Total					
		Early-entry		Late-entry		Combined Group	
		r	N	r	N	r	N
Gr. 8 French proficiency (groups tests only)	FR I	0.60	62	0.56	57	0.56	119
	IEA IV	0.61	62	0.59	57	0.58	119
	CLOZE	0.58	62	0.63	57	0.60	119
	ERROR	-0.60	62	-0.41	57	-0.49	119
Grade 10 French proficiency (group tests only)	FR IV	0.60	64	0.56	60	0.57	124
	Writing	0.50	64	0.41	60	0.46	124

Correlations among the group tests included as independent variables, four Grade 8 French proficiency tests and two Grade 10 tests, together with an aptitude test given at the Grade 9 level, are shown in Table 14 for early- and late-entry groups and for the two groups combined.

TABLE 14

CORRELATIONS AMONG SEVEN INDEPENDENT VARIABLES,
GRADE 12 EARLY- AND LATE-ENTRY GROUPS, OTTAWA, 1984

Variable	Correlation with					
	IEA IV	CLOZE	ERROR	FR IV	WRIT	VR
Early-entry group (N = 49)						
FR I	0.69	0.66	-0.42	0.70	0.59	0.68
IEA IV	--	0.53	-0.49	0.66	0.52	0.72
CLOZE	--	--	-0.63	0.58	0.59	0.51
ERROR	--	--	--	-0.48	-0.46	-0.32
FR IV	--	--	--	--	0.54	0.74
WRIT	--	--	--	--	--	0.52
Late-entry group (N =49)						
FR I	0.70	0.59	-0.65	0.36	0.32	0.14
IEA IV	--	0.48	0.54	0.44	0.33	0.07
CLOZE	--	--	-0.44	0.42	0.37	-0.06
ERROR	--	--	--	-0.44	-0.52	-0.07
FR IV	--	--	--	--	0.46	0.34
WRIT	--	--	--	--	--	-0.03
Combined group (N = 98)						
FR I	0.71	0.65	-0.53	0.57	0.46	0.40
IEA IV	--	0.54	-0.49	0.56	0.41	0.34
CLOZE	--	--	-0.51	0.52	0.48	0.22
ERROR	--	--	--	-0.44	-0.48	-0.18
FR IV	--	--	--	--	0.51	0.55
WRIT	--	--	--	--	--	0.28

Regression analysis. The step-wise regression procedure of the SPSS package (Hull and Nie, 1981) was used to determine whether a combination of variables would improve prediction of the scores obtained on the tests taken by students in the K-71 cohort at the Grade 12 level. Several combinations of the three groups of independent variables listed at the beginning of this section were used to predict the total scores on the University of Ottawa French Proficiency Test, and on three other measures administered in 1984. One group of independent variables consisted of scores on four tests of French proficiency taken at the Grade 8 level and another of scores on two such tests taken in Grade 10. These six scores were combined for still another analysis, and finally the DAT Verbal Reasoning score was included in the group of predictor variables.

When these groups of predictors were used to determine whether a combination of variables would improve prediction of the total scores on the French proficiency test taken by Grade 12 students at the University of Ottawa, it was found that in most cases the use of two or more measures increased the multiple correlation, as shown in Table 15. New variables were entered as long as the value of R increased by at least 0.01.

Most of the group measures of French proficiency tended to have correlations of about 0.60 with the criterion measure being considered, the total score on the French proficiency test taken at the University of Ottawa. For the early- and late-entry groups taken separately, when seven variables were considered, the multiple correlations with the criterion were 0.74 and 0.77 respectively, although in each case a completely different set of predictor variables was entered into the regression equation.

TABLE 15

STEP-WISE REGRESSION ANALYSIS FOR FRENCH PROFICIENCY: TOTAL SCORE, GRADE 12 EARLY- AND LATE-ENTRY GROUPS, OTTAWA, 1984

Variables used	Group	N	Variable added	Simple r	Multiple R	% of var R2
Grade 8 French proficiency (4 variables)	EFI	62	IEA IV	0.61	0.61	37
			ERROR	-0.60	0.70	49
	LFI	57	CLOZE	0.63	0.63	40
			IEA IV	0.59	0.70	50
	Both	119	CLOZE	0.60	0.60	36
			IEA IV	0.58	0.66	44
			ERROR	-0.49	0.69	47
Grade 10 French proficiency (2 variables)	EFI	64	FR IV	0.60	0.60	36
			WRIT	0.50	0.64	41
	LFI	60	FR IV	0.56	0.56	32
	Both	124	FR IV	0.57	0.57	33
			WRIT	0.46	0.62	38
Grade 8 and 10 French proficiency (6 variables)	EFI	57	FR IV	0.61	0.61	37
			ERROR	-0.57	0.67	45
			IEA IV	0.59	0.71	50
	LFI	52	CLOZE	0.63	0.63	40
			FR IV	0.61	0.73	53
			IEA IV	0.62	0.75	57
	Both	109	FR IV	0.59	0.59	35
			CLOZE	0.58	0.67	45
			ERROR	-0.53	0.70	49
Grade 8 and 10 French proficiency plus VR (7 variables)	EFI	49	FR I	0.62	0.62	39
			ERROR	-0.57	0.71	50
			VR	0.58	0.74	55
	LFI	49	CLOZE	0.62	0.62	39
			FR IV	0.61	0.73	54
			IEA IV	0.59	0.77	59
	Both	98	FR IV	0.57	0.57	33
			CLOZE	0.57	0.65	43
			ERROR	-0.53	0.68	47
			IEA IV	0.57	0.70	49

For the combined group of 98 students in both early- and late-entry immersion, the use of four variables (FR IV, CLOZE, ERROR, and IEA IV) gave a multiple correlation of 0.70, the regression equation being:

$$y = 53.9 + 0.32(\text{FR IV}) + 0.43(\text{CLOZE}) - 0.26(\text{ERROR}) + 0.33(\text{IEA IV})$$

where y represents the total score on the University of Ottawa French proficiency test. These four variables, three of them obtained at the Grade 8 level, were included most frequently in the various step-wise regression analyses which were carried out to examine the prediction of total scores on the University of Ottawa French Proficiency test. The fourth of the measures obtained in Grade 8 (FR I) had a correlation with the criterion which was close to that of the other variables, but since its correlation with these other variables was close to 0.70, it did not appear to add much additional information. The other two measures, the Grade 10 writing test (WRIT) and the Grade 9 verbal reasoning test (VR) had lower correlations with the criterion and in most cases did not help to increase the multiple correlation.

Table 16 shows the results of a similar analysis test for the six Grade 8 and Grade 10 French proficiency variables identified earlier, using the Dictation I score as the dependent variable. Using two or three variables increased the multiple correlation to 0.68 or 0.70, and it will be noted that the Grade 10 writing score was included in each of the subgroups of variables selected. Similar analyses involving the other two Grade 12 measures as dependent variables resulted in much less accurate prediction, the values of R being 0.62 for the total score on the Grade 12 speaking test, while no combination of variables increased the rather low simple correlations with the psychology pre-test as criterion. These two criterion variables had limited range and were probably also less reliable than the others used.

TABLE 16

STEP-WISE REGRESSION ANALYSIS FOR DICTATION WITH SPELLING SCORE
USING SIX INDEPENDENT VARIABLES,
GRADE 12 EARLY- AND LATE-ENTRY GROUPS, OTTAWA, 1984

Variables added	Group	N	Variables added	Simple r	Multiple R	% of var R2
Grade 8 and 10 French proficiency (6 variables)	EFI	57	FR IV	0.62	0.62	39
			WRIT	0.54	0.68	46
	LFI	46	FR I	0.57	0.57	32
			WRIT	0.54	0.70	49
	Both	103	FR I	0.53	0.57	32
			WRIT	0.54	0.64	43
			CLOZE	0.54	0.63	46

SUMMARY

On-going research on second-language learning in the Ottawa Board of Education supported by contracts with the Ministry of Education has continued since 1973. One of the three topics of investigation in 1984 was the French proficiency of a group of Grade 12 students who had entered Kindergarten in 1971 and who had been in either early- or late-entry immersion programs at the elementary level, typically followed by 10 to 12 courses in French during their high school years. The cumulative amount of time in French averaged from 6500 to 7000 hours for early-entry students and 3000 to 4000 hours for late-entry. Students taking Grade 12 classes in French were tested, but the analysis groups were restricted to those who had been in the program since Grade 4 for the early-entry group, or to those who had had the full late-entry program, starting in Grade 6 in Ottawa Board schools and in Grade 7 in the Carleton Board.

Three tests were administered to the Grade 12 student groups. Two had been developed by staff at the University of Ottawa and the third by the research team. It was found that 93 per cent of the early-entry group and 90 per cent of the late-entry students obtained scores on the Test of French Proficiency which would be sufficiently high to excuse them from the required French language courses. The mean scores of the Grade 12 bilingual program group were also considerably higher than the post-test scores of a group of anglophone students at the university who had just completed an experimental course in which first year psychology had been taught in French. However, the early- and late-entry groups, each consisting of about 70 students, did not differ significantly on the tests taken at the University of Ottawa.

On an individual speaking test designed to examine the fluency and communicative competence of the student, the mean scores of the early-entry group were significantly higher than those of the late-entry students for each of the three sections of the test and also for the total score.

The instruments used with Grade 12 had not been used previously with any groups within the Ottawa and Carleton Boards, but it was possible to compare the general results with those of previous years. For the Grade 10 groups tested in 1981 there were significant differences between the early- and late-entry groups on all five of the measures used. The K-71 cohort was tested in the following year, using a different set of tests. There were fewer differences between the early- and late-entry students than in the previous years, possibly because some of the tests used were less sensitive. It is also possible that there were differences in aptitude or motivation between these two Grade 10 groups, but no information is available to examine this possibility.

A regression analysis showed that a combination of from two to four variables could lead to a multiple correlation of about 0.70 with the French proficiency screening test and with a dictation test used at the University of Ottawa. The simple correlations of the various Grade 8 and Grade 10 tests with these two criterion tests tended to be between 0.50 and 0.60.

Thus the results of this study show that French proficiency tests taken at the Grade 8 level can be effective predictors of results obtained at the Grade 12 level. In addition, the data collected so far suggest that differences between the early- and late-entry immersion students decrease as they progress through high school. Moreover, in the high school grades there is considerable overlap in the score distributions of the two groups.

Although there may be detectable differences between these groups if the appropriate instrument is used, it should be emphasized that both groups achieve a commendable standard of proficiency, when compared with francophones on written tests, with anglophones entering a bilingual university, and with public servants whose language proficiency is being examined. Such differences as do seem to continue to exist appear to be detected less often on multiple-choice tests of usage, reading, and listening comprehension and more often on tests of oral communication and perhaps breadth of vocabulary.

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APPENDIX

TIME SPENT IN FRENCH BY STUDENTS IN IMMERSION PROGRAMS

IN OTTAWA AND CARLETON, 1983-84

TABLE A-1

TIME SPENT IN FRENCH BY STUDENTS IN IMMERSION PROGRAMS

IN OTTAWA AND CARLETON, 1983-84

Grade	Ottawa Early-entry		Ottawa Late-entry		Carleton Early-entry		Carleton Late-entry	
	% in Fr.	Cum. hrs.	% in Fr.	Cum. hrs.	% in Fr.	Cum. hrs.	% in Fr.	Cum. hrs.
K	100	450	20	90	100	450	10	40
1	100	1350	14	220	100	1350	7	100
2	80	2070	14	340	80	2070	7	160
3	80	2790	14	470	80	2790	7	220
4	80	3510	14	590	75	3460	7	280
5	80	4230	14	720	65	4050	7	340
6	50	4680	100	1620	50	4500	14	470
7	50	5130	50	2070	50	4950	80	1190
8	50	5580	50	2520	50	5400	80	1910
9	50	6030	50	2970	50#	5850	43#	2300
10	50	6480	50	3420	38#	6190	33#	2600
11	38#	6820	38#	3760	25#	6420	30#	2870
12	25#	7050	25#	3990	16#	6560	19#	3040

Since these pupils may take varying numbers of courses in French per year, these figures represent the average number of courses taken by the actual group of students whose scores were considered.